

REMARKS

Claims 1-11 are pending. Claims 1 and 7 are currently amended. Claims 6 and 9 are canceled.

The current amendment of claim 1 changes the concentration of the tetraalkylorthosilicate in the mixture to being in the range of from at least about 3500 ppm to 10,000 ppm and specifies that the film coating has an optical clarity of at least 98 percent and a haze value of not greater than 2 percent. The instant specification supports the amendment, including on page 5, at lines 11 and 22-23, respectively. The current amendment to claim 7 deletes subject matter that has become redundant with the current amendment of claim 1. This paper cancels claim 9 as being redundant in view of the latter amendment of claim 1.

Claim Rejections – Double Patenting

In the Office Action, claims 1-3 and 5 are rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 1, 6, and 13 of U.S. Patent No. 6,815,014 (Gabelnick US) in view of Koinuma (EP 0617142 A1) and Hunt (US 2002/0058143). It was argued in the Office Action that Koinuma mentions a concentration range of 33 parts per million (ppm) to 10,000 ppm for a particular tetraalkylorthosilicate, namely tetraethylorthosilicate (TEOS).

Applicants disagree. Gabelnick US in view of Koinuma and Hunt do not teach or suggest using the instant concentration of the tetraalkylorthosilicate in the mixture of from at least about 3500 ppm to about 10000 ppm, or producing an optically clear film coating therewith. In the claimed instant plasma-generated vapor deposited coating process, Applicants have increased the lower limit of the concentration of the tetraalkylorthosilicate in the mixture to at least about 3500 ppm, the same lower limit value as was in claim 7. And Applicants have added to the claims the optical clarity limitation of original claim 9. Since neither claim 7 nor claim 9 are subject to this rejection, Applicants believe that the process of claim 1, and thus of dependent claims 2, 3 and 5, is nonobvious over U.S. Patent No. 6,815,014 in view of Koinuma and is patentable under the judicial doctrine of nonstatutory obviousness-type double patenting.

In the Office Action, claims 1-3 and 5 are rejected on the ground of nonstatutory obviousness-type double patenting as allegedly being unpatentable over claims 1, 6, and 13 of U.S. Patent No. 6,815,014 (Gabelnick US) in view of Babayan (WO 00/70117). It was argued in the Office Action that Babayan mentions a TEOS concentration range of 2015 ppm (Applicants previously calculated 2003 ppm). Applicants disagree. Since the aforementioned limitations from claims 7 and 9 were added to claim 1 and neither claim 7 nor claim 9 are subject to this rejection, Applicants believe that the process of claim 1, and thus of dependent claims 2, 3 and 5, is nonobvious over U.S. Patent No. 6,815,014 in view of Babayan and is patentable under the judicial doctrine of nonstatutory obviousness-type double patenting.

Claim Rejections – 35 U.S.C. §102

In the Office Action, claims 1, 2, 5-7, and 11 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Babayan (WO 00/70117) (Applicants address the alternative 103(a) rejection in the immediately following paragraph). It was argued in the Office Action that Babayan uses a TEOS concentration that is greater than 2000 ppm (i.e., 2015 ppm). Applicants disagree. For reasons analogous to those given above for the first nonstatutory obviousness-type double patenting rejection and because “about 3500 ppm” does not encompass 2015 ppm, Applicants believe that claim 1 and dependent claims 2, 5-7, and 11 are novel over Babayan and are patentable under 35 U.S.C. §102(b).

Claim Rejections – 35 U.S.C. §103

In the Office Action, claims 1, 2, 5-7, and 11 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Babayan (WO 00/70117). It was argued in the Office Action that Babayan uses a TEOS concentration that is greater than 2000 ppm (i.e., 2015 ppm). Applicants disagree. Since the aforementioned limitation from claim 9 was added to claim 1 and claim 9 is not subject to this rejection and further because Babayan’s TEOS concentration of 2015 ppm does not reasonably apply to the instant “about 3500 ppm,” Applicants believe that claim 1 and dependent claims 2, 5-7, and 11 are not obvious in view of Babayan and are patentable under 35 U.S.C. §103(a).

In the Office Action, claims 1 and 9 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Koinuma in view of Hunt. It was argued in the Office Action that Koinuma mentions TEOS as a silane compound and teaches a concentration of silane of from 33 ppm to 10,000 ppm. Koinuma also teaches its film is characterized by “transparency.” Hunt mentions oxygen as carrier gas.

Applicants disagree. Applicants note that Koinuma in view of Hunt do not teach or suggest the instant lower limit of tetraalkylorthosilicate concentration of “about 3500 ppm,” the same lower limit value as was in claim 7. The currently amended claims combine process limitations (e.g., flow velocity and concentrations) and ingredients (e.g., tetraalkylorthosilicate and balance gas of air, oxygen, CO₂, O₃, NO, or combination thereof) in a plasma-generated vapor deposited coating process that deposits the optically clear film coating described in the claims. Optical clarity of a plasma-generated vapor deposited coating is a property of the coating that is determined based on certain tests – it cannot simply be combined or transferred from one plasma-generated vapor deposited coating to another plasma-generated vapor deposited coating. Rather, if Koinuma in view of Hunt would have tried the instant concentration of the tetraalkylorthosilicate in the mixture of from at least about 3500 ppm to about 10000 ppm, their method would need to be significantly modified in order to arrive at the instant combination of process limitations and ingredients that produces the instant optically clear film coating, and these references have not provided direction as to how one would make such modifications. Accordingly, Applicants believe that claims 1 and 9 are nonobvious over Koinuma in view of Hunt and are patentable under 35 U.S.C. §103(a).

In the Office Action, claims 1, 10, and 11 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Gabelnick WO (WO 03/066932). It was stated in the Office Action that Gabelnick WO teaches a TEOS concentration of preferably not greater than 2000 ppm and a film that is “optically clear.” Applicants disagree. Since the aforementioned limitations from claims 7 and 9 were added to claim 1 and neither claim 7 nor claim 9 are subject to this rejection, Applicants believe that Gabelnick WO does not provide direction on arriving at the claimed invention. Accordingly, Applicants believe that claims 1, 10, and 11 are nonobvious over Gabelnick WO and are patentable under 35 U.S.C. §103(a).

In the Office Action, claims 1, 10, and 11 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Gabelnick WO in view of Koinuma. It was stated in the Office Action that Gabelnick WO teaches a TEOS concentration of preferably not greater than 2000 ppm and a film that is "optically clear." Koinuma teaches a TEOS concentration from 33 ppm to 10000 ppm as mentioned previously. Applicants disagree. Since the aforementioned limitations from claims 7 and 9 were added to claim 1 and neither claim 7 nor claim 9 are subject to this rejection, Applicants believe that claims 1, 10, and 11 are nonobvious over Gabelnick WO in view of Koinuma and are patentable under 35 U.S.C. §103(a).

In the Office Action, claims 2-4 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Koinuma in view of Hunt as applied to claim 1 and further in view of Yializis (US Patent No. 6,118,218). It was argued in the Office Action that it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the perforated electrode in the atmospheric plasma treatment method of Yializis to the glow discharge plasma silica film forming method of Koinuma. Applicants disagree. Since the aforementioned limitations from claims 7 and 9 were added to claim 1 and neither claim 7 nor claim 9 are subject to this rejection, Applicants believe that claims 2-4 are nonobvious over Koinuma in view of Hunt as applied to claim 1 and further in view of Yializis and are patentable under 35 U.S.C. §103(a).

In the Office Action, claims 1-5, 7 and 8 are rejected under 35 U.S.C. §103(a) as allegedly being obvious over Yializis in view of Koinuma. It was argued in the Office Action that it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the use of a tetraalkylorthosilicate gas to create a silica film via glow discharge plasma as taught by Koinuma to the atmospheric plasma treatment method of Yializis. Applicants disagree. Since the aforementioned limitation from claim 9 was added to claim 1 and claim 9 is not subject to this rejection. Further, if Yializis in view of Koinuma would have tried the instant concentration of the tetraalkylorthosilicate in the mixture of from at least about 3500 ppm to about 10000 ppm, their method would need to be significantly modified in order to arrive at the instant combination of process limitations and ingredients that produces the instant optically

clear film coating, and these references have not provided direction as to how one would make such modifications. Accordingly, Applicants believe that claims 1-5, 7 and 8 are nonobvious over Yializis in view of Koinuma and patentable under 35 U.S.C. §103(a).

In the Office Action, claim 11 is rejected under 35 U.S.C. §103(a) as allegedly being obvious over Koinuma in view of Hunt as applied to claim 1 and in further view of Sloodman (US Patent No. 5,576,076). It was argued in the Office Action that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the experiment of Koinuma and determine the surface energy as taught by Sloodman. Applicants disagree. Since the aforementioned limitations from claims 7 and 9 were added to claim 1 and neither claim 7 nor claim 9 are subject to this rejection, Applicants believe that claim 11 is nonobvious over Koinuma in view of Hunt as applied to claim 1 and in further view of Sloodman and patentable under 35 U.S.C. §103(a).

In view of the above amendments and remarks, Applicants believe rejections of claims 1-5, 7, 8, 10, and 11 have been overcome and claims 1-5, 7, 8, 10, and 11 are patentable. Applicants request continued examination and consideration of claims 1-5, 7, 8, 10, and 11.

Should any rejections be maintained or new rejections be made in a subsequent office action, the undersigned would welcome an opportunity to telephonically interview the application with the Examiner and an inventor before mailing of the subsequent office action in order to advance prosecution.

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